

IN THE CLAIMS:

1. (currently amended) A method for generating an image of a heart at a selected cardiac phase, said method comprising:

acquiring a first electrocardiogram (ECG) of the heart at a first phase;

introducing a time delay into the first ECG ~~using a filter~~;

generating a phase-delayed ECG of the heart at ~~the first phase using a second phase~~ based on the time-delayed first ECG;

determining ~~if the phase-delayed ECG and the first ECG have the same approximate information~~ if the first phase is within a predetermined time of the second phase; and

generating an image of the heart ~~if the phase-delayed ECG and the first ECG have the same approximate information~~ if the first phase is within the predetermined time of the second phase.

2. (previously presented) A method in accordance with Claim 1 wherein said generating an image of the heart comprises generating an MRI image of the heart.

3. (canceled)

4. (currently amended) A method in accordance with Claim 1 wherein said determining ~~if the phase-delayed ECG and the first ECG have the same approximate information~~ if the first phase is within a predetermined time of the second phase further comprises receiving at a pulse sequence descriptor (PSD) the first ECG and the phase-delayed ECG, and using the PSD to determine ~~if the first ECG and the phase-delayed ECG comprise the same approximate phase information~~ if the first phase is within the predetermined time of the second phase.

5. (original) A method in accordance with Claim 4 further comprising:

rejecting the first ECG and the phase-delayed ECG based on the phase information included in the first ECG and the phase-delayed ECG; and

re-initializing an MRI system to re-acquire cardiac information of the heart.

6. (original) A method in accordance with Claim 4 further comprising:

rejecting the first ECG and the phase-delayed ECG based on the phase information included in the first ECG and the phase-delayed ECG; and

extrapolating a cardiac phase based on the phase information included in the first ECG and the phase-delayed ECG.

7. (canceled)

8. (currently amended) A method for generating an image of a heart at a selected cardiac phase using an MRI imaging system, said method comprising:

acquiring a first electrocardiogram (ECG) of the heart at a first phase;

introducing a time delay into the first ECG ~~using a filter~~;

generating a second electrocardiogram (ECG) of the heart ~~at the first phase using~~ at a second phase based on the time-delayed first ECG;

determining ~~if the first ECG and the second ECG have the same approximate information~~ if the first phase is within a predetermined time of the second phase; and

generating an MRI image of the heart ~~if the first ECG and the second ECG have the same approximate information~~ if the first phase is within the predetermined time of the second phase.

9. (currently amended) A method in accordance with Claim 8 wherein after said acquiring a second electrocardiogram (ECG) of the heart at the first phase and before said determining ~~if the first ECG and the second ECG have the same approximate information~~ if the first phase is within a predetermined time of the second phase, said method further comprises receiving at a pulse sequence descriptor (PSD) the first ECG and the second ECG.

10. (original) A method in accordance with Claim 9 further comprising:

rejecting the first ECG and the second ECG based on the phase information in the first ECG and the second ECG; and

re-initializing an MRI system to re-acquire cardiac information of the heart.

11. (canceled)

12. (currently amended) A method for generating an image of a heart at a selected cardiac phase, said method comprising:

acquiring a first electrocardiogram (ECG) of the heart at a first phase;

introducing a time delay into the first ECG ~~using a filter~~;

generating a second electrocardiogram (ECG) of the heart ~~at the first phase using~~ at a second phase based on the time-delayed first ECG;

acquiring a first plethysmograph signal of the heart at a first phase;

determining ~~if the first ECG, the second ECG, and the plethysmograph signal have the same approximate information~~ if the first phase is within a predetermined time of the second phase; and

generating an MRI image of the heart ~~if the first ECG, the second ECG, and the plethysmograph signal have the same approximate information~~ if the first phase is within the predetermined time of the second phase.

13. (previously presented) A method in accordance with Claim 12 wherein said acquiring a first electrocardiogram (ECG) of the heart at a first phase comprises acquiring a first ECG of the heart at a first phase using a magnetic resonance imaging (MRI) system.

14. (currently amended) A method in accordance with Claim 12 wherein after said acquiring a first plethysmograph signal of the heart at the first phase and before said determining ~~if the first ECG, the second ECG, and the first plethysmograph signal have the same approximate information~~ if the first phase is within a predetermined time of the second phase, said method further comprises receiving at a pulse sequence descriptor (PSD) the first ECG, the second ECG, and the first plethysmograph signal.

15. (previously presented) A method in accordance with Claim 14 further comprising:

rejecting the first ECG, the second ECG, and the first plethysmograph signal based on the phase information in the first ECG and the first plethysmograph signal; and

re-initializing the MRI system to re-acquire cardiac information of the heart.

16. (canceled)

17. (currently amended) A magnetic resonance imaging (MRI) system comprising:

a radio frequency (RF) coil assembly for imaging a subject volume; and

a computer coupled to said RF coil, said computer configured to:

acquire a first electrocardiogram (ECG) of the heart at a first phase;

introduce a time delay into the first ECG by ~~filtering the first ECG~~;

generate a phase-delayed ECG of the heart at ~~the first phase using~~ at a second phase based on the time-delayed first ECG;

~~determine if the phase-delayed ECG and the first ECG have the same approximate information if the first phase is within a predetermined time of the second phase;~~
and

~~generate an image of the heart if the phase-delayed ECG and the first ECG have the same approximate information if the first phase is within the predetermined time of the second phase.~~

18. (canceled)

19. (previously presented) An MRI system in accordance with Claim 17 wherein said computer is further configured to:

receive at a pulse sequence descriptor (PSD) the first ECG and the phase-delayed ECG.

20. (original) An MRI system in accordance with Claim 17 wherein said computer is further configured to:

reject the first ECG and the phase-delayed ECG based on the phase information included in the first ECG and the phase-delayed ECG; and

re-initiate the MRI system to re-acquire cardiac information of the heart.

21. (canceled)

22. (currently amended) A computer program embodied on a computer readable medium for controlling a medical imaging system, said program configured to:

acquire a first electrocardiogram (ECG) of the heart at a first phase;

introduce a time delay into the first ECG ~~using a filter~~;

generate a second electrocardiogram (ECG) of the heart ~~at the first phase using~~ at a second phase based on the time-delayed first ECG;

~~determine if the first ECG and the second ECG have the same approximate information~~ if the first phase is within a predetermined time of the second phase; and

~~generate an MRI image of the heart if the first ECG and the second ECG have the same approximate information~~ if the first phase is within the predetermined time of the second phase.

23. (previously presented) A computer program in accordance with Claim 22 wherein said program further configured to:

receive at a pulse sequence descriptor (PSD) the first ECG and the second ECG.

24. (original) A computer program in accordance with Claim 22 wherein said program further configured to:

reject the first ECG and the second ECG based on the phase information in the first ECG and the second ECG; and

re-initiate the MRI system to re-acquire cardiac information of the heart.

25. (canceled)